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The Big Book of Concepts. By Gregory L. Murphy. The MIT Press, Cambridge, MA. (2002). 555 pages. $45.
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Information and Randomness: An Algorithmic Perspective. Second Edition, Revised and Extended. By Cristian S. Calude. Springer, New York. (2002). 467 pages. $54.95.
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Economic Policy Reforms and the Indian Economy. Edited by Anne O. Krueger. The University of Chicago Press, Chicago, IL. (2002). 377 pages. $75.
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text (A.O. Krueger and S. Chinoy). 2. India's fiscal situation: Is a crisis ahead? (T.N. Srinivasan). Comment (S. Acharya). Comment (K. Kletzer). Comment (N.K. Singh). 3. State-level performance under economic reforms in India (M.S. Ahluwalia). Comment (S. Acharya). II. Private economic activity. 4. Doing business in India: What has liberalization changed? (N. Forbes). 5. Bangalore: The Silicon Valley of Asia? (A. Saxenian). Comment (N.R. Narayana Murthy and S. Raju). Comment (A. Desai). III. Government activity. 6. Small-scale industry policy in India: A critical evaluation (R. Mohan). Comment (R.G. Noll). 7. Emerging challenges for Indian education policy (A. Kochar). 8. Does economic growth increase the demand for schools? Evidence from rural India, 1960–99 (A.D. Foster and M.R. Rosenzweig). 9. Priorities for further reforms (A.O. Krueger). Conference participants. Contributors. Author index. Subject index.

Combinatorial Algorithms. Enlarged Second Edition. By T. C. Hu and M. T. Shing. Dover Publications, Mineola, NY. (2002). 354 pages. $16.95.
Contents:

Preface. Preface to the second edition. 1. Shortest paths. 1.1. Graph terminology. 1.2. Shortest path. 1.3. Multiterminal shortest path. 1.4. Decomposition algorithm. 1.5. Acyclic network. 1.6. Shortest paths in a general network. 1.7. Minimum spanning tree. 1.8. Breadth-first-search and depth-first-search. 2. Maximum flows. 2.1. Maximum flow. 2.2. Algorithms for max flows. 2.2.1. Ford and Fulkerson. 2.2.2. Karzanov's algorithms. 2.2.3. MPM algorithms. 2.2.4. Analysis of algorithms. 2.3. Multi-terminal maximum flows. 2.3.1. Realization. 2.3.2. Analysis. 2.3.3. Synthesis. 2.3.4. Multi-commodity flows. 2.4. Minimum cost flows. 2.5. Applications. 2.5.1. Sets of distinct representatives. 2.5.2. PERT. 2.5.3. Optimum communication spanning tree. 3. Dynamic programming. 3.1. Introduction. 3.2. Knapsack problem. 3.3. Two-dimensional knapsack problem. 3.4. Minimum-cost alphabetic tree. 3.5. Summary. 4. Backtracking. 4.1. Introduction. 4.2. Estimating the efficiency of backtracking. 4.3. Branch and bound. 4.4. Game-tree. 5. Binary tree. 5.1. Huffman's tree. 5.3. Alphabetic tree. 5.4. Hu-Tucker algorithm. 5.5. Feasibility and optimality. 5.6. Garsia and Wach's algorithm. 5.7. Regular cost function. 5.8. T-ary tree and other results. 6. Heuristic and near optimum. 6.1. Greedy algorithm. 6.2. Bin-packing. 6.3. Job-scheduling. 6.4. Job-scheduling (tree constraints). 7. Matrix multiplication. 7.1. Strassen's matrix multiplication. 7.2. Optimum order of multiplying matrices. 7.3. Partitioning a convex polygon. 7.4. The heuristic algorithm. 8. NP-complete. 8.1. Introduction. 8.2. Polynomial algorithms. 8.3. Nondeterministic algorithms. 8.4. NP-complete problems. 8.5. Facing a new problem. 9. Local indexing algorithms. 9.1. Mergers of algorithms. 9.2. Maximum flows and minimum cuts. 9.3. Maximum adjacency and minimum separation. 10. Gomory-Hu tree. 10.1. Tree edges and tree links. 10.2. Contraction. 10.3. Domination. 10.4. Equivalent formulations. 10.4.1. Optimum mergers of companies. 10.4.2. Optimum circle partition. 10.5. Extreme stars and host-feasible circles. 10.6. The high-level approach. 10.7. Chop-stick method. 10.8. Relationship between phases. 10.9. The staircase diagram. 10.10. Complexity issues. Appendix A. Comments on Chapters 2, 5, and 6. A.1. Ancestor trees. A.2. Minimum surface or plateau problem. A.3. Comments on binary trees on Chapter 5. A.3.1. A simple proof of the Hu-Tucker algorithm. A.3.2. Binary search trees. A.3.3. Binary search on a tape. A.4. Comments on §6.2, bin-packing. Appendix B. Network algebra.

Cellular Automata and Complexity: Collected Papers. By Stephen Wolfram. Westview Press, Boulder, CO. (1994). 596 pages. $35.
Contents:

Part One. Primary papers. Statistical mechanics of cellular automata. Algebraic properties of cellular automata. Universality and complexity in cellular automata. Computation theory of cellular automata. Undecidability and intractability in theoretical physics. Two-dimensional cellular automata. Origins of randomness in physical systems. Thermodynamics and hydrodynamics of cellular automata. Random sequence generation by cellular automata. Approaches to complexity engineering. Minimal cellular automation approximations to continuum systems. Cellular automation fluids: Basic theory. Part Two. Additional and survey papers. Cellular automata. Computers in science and mathematics. Geometry of binomial coefficients. Twenty problems in the theory of cellular automata. Cryptography with cellular automata. Complex systems theory. Cellular automaton supercomputing. Part Three. Appendices. Tables of cellular automaton properties. Scientific bibliography of Stephen Wolfram. Index.

The Neural Simulation Language: A System for Brain Modeling. By Alfredo Weitzenfeld, Michael A. Arbib, and Amanda Alexander. The MIT Press, Cambridge, MA. (2002). 439 pages. $55, £37.95.
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Preface. Acknowledgments. 1. Introduction. 1.1. Neural networks. Modeling. Simulation. 1.2. Modularity, object-oriented programming, and concurrency. Modularity in neural networks. Object-oriented programming. Concurrency in neural networks. 1.3. Modeling and simulation in NSL. Modeling. Modules. Neural networks. Simulation. 1.4. The NSL system. Simulation system. Schematic capture system. Model/module libraries. Basic hierarchy. 1.5. Summary. 2. Simulation in NSL. 2.1. Selecting a model. 2.2. Simulation interface. 2.3. Simulating a model. 2.4. Maximum selector. Model description. Simulation interaction. 2.5. Hopfield. Model description. Simulation interaction. 2.6. Backpropagation. Model description. Simulation interaction. 2.7. Summary. 3. Modeling in NSL. 3.1. Implementing model architectures with NSLM. Modules and models. Neural networks. 3.2. Visualizing model architectures with SCS. 3.3. Maximum selector. Model implementation. 3.4. Hopfield. Model implemen-